U.S. Department
of Transportation

**Federal Railroad
Administration**

1120 Vermont Ave., N.W.
Washington, D.C. 20590

DEC 6 2002

Nova Blazej, NEPA Reviewer
Federal Activities Office
Environmental Protection Agency
Region 9
75 Hawthorne Street, CMD-2
San Francisco, CA 94105

Re: California High Speed Train EIS/EIR

Dear Ms. Blazej:

The Federal Railroad Administration (FRA) is pleased to enclose for your concurrence, the Draft Purpose and Need Statement for the California High Speed Train EIS/EIR, dated November 25, 2002. An earlier version of this section was sent to your agency and other agencies on June 17, 2002 for review and comment. The enclosed Draft Purpose and Need Statement incorporates revisions in response to comments received by FRA. As the Lead Federal Agency for the environmental review process and preparation of the EIS/EIR, the FRA is providing this section of the environmental document to the Environmental Protection Agency in a timely and effective manner consistent with the draft MOU for cooperating agencies and the Clean Water Act Section 404 Integration Process for Surface Transportation Projects.

Concurrence with the Draft Purpose and Need Statement by Federal Cooperating Agencies is a key milestone in the environmental review process, which will be followed by concurrence on the definition of project alternatives to be evaluated in the Program EIS/EIR. FRA recognizes that this draft section of the environmental document may be revised as we move through the environmental process. Because your agency has regulatory/resource responsibilities under the National Environmental Policy Act and Clean Water Act Section 404 Integration Process, Environmental Protection Agency concurrence is needed on the Draft Purpose and Need Statement, and specifically on its general direction and content relevant to the Section 404 basic and overall project purpose.

FRA is requesting written concurrence with the enclosed Purpose and Need Statement within 45 days of receipt of this letter. If written concurrence (or non-concurrence) is not received within the specified timeframe, the Program EIS/EIR will advance based on the presumption that a lack of response means that the Environmental Protection Agency has no significant objections to this section.

The Program EIS/EIR is on a very tight schedule and these key milestones are critical to the progress of the environmental evaluation. We look forward to your response to this request.

Sincerely,

Mark E. Yachmetz
Associate Administrator
For Railroad Development

Enclosure: November 25, 2002 Draft Purpose and Need Statement

Cc: California High Speed Rail Authority

CALIFORNIA HIGH-SPEED TRAIN

Program Environmental Impact Report/Environmental Impact Statement

DELIBERATIVE DRAFT

TASK 1.4

PURPOSE AND NEED

Prepared for:

California High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

CALIFORNIA HIGH SPEED RAIL AUTHORITY

U.S. Department of Transportation
Federal Railroad Administration

DELIBERATIVE DRAFT

TASK 1.4:

PURPOSE AND NEED AND OBJECTIVES

Prepared by:

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November 25, 2002

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 PURPOSE AND NEED/OBJECTIVES

This Preliminary Draft of Section 1.0 of the combined Tier 1-Program Environmental Impact Report and Environmental Impact Statement (Program EIR/EIS) describes the need for a transportation proposal to relieve the growing capacity and congestion constraints of the existing highway, airport, bus and conventional passenger rail infrastructure for intercity travel. This section of the Program EIR/EIS also describes how improved intercity transportation would deliver predictable, consistent travel times that would not degrade over time and would serve the purpose of augmenting the existing infrastructure, thereby, relieving congestion and capacity constraints, and at the same time offering a reliable, safe, low-emission, time-efficient travel alternative.

1.1 INTRODUCTION

The California High-Speed Rail Authority (Authority) was created by the Legislature in 1996 to develop a plan for the construction, operation, and financing of a statewide, intercity high-speed passenger train system.[1] After completing a number of initial studies over the past six years to assess the feasibility of a high-speed train system in California and to evaluate the potential ridership for a variety of alternative corridors and station areas, the Authority recommended the evaluation of a proposed high-speed train system as the logical next step in the development of California's transportation infrastructure. The Authority does not have responsibility for other intercity transportation systems or facilities, such as expanded highways, or improvements to airports or passenger rail or transit used for intercity trips.

The Authority adopted a *Final Business Plan* in June 2000, which reviewed the economic feasibility of a 1,127-kilometer-long (700-mile-long) high-speed train system. This system would be capable of speeds in excess of 321.8 kilometers per hour (200 miles per hour [mph]) on a dedicated, fully grade-separated track with state-of-the-art safety, signaling, and automated train control systems. The system described would connect and serve the major metropolitan areas of California, extending from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego. The high-speed train system is projected to carry a minimum of 42 million passengers annually (32 million intercity trips and 10 million commuter trips) by the year 2020.

Following the adoption of the Business Plan, the appropriate next step for the Authority to take in the pursuit of a high-speed train system is to satisfy the environmental review process required by federal and state laws which will in turn enable public agencies to select and approve a high speed rail system, define mitigation strategies, obtain necessary approvals, and obtain financial assistance necessary to implement a high speed rail system. For example, the Federal Railroad Administration (FRA) may be requested by the Authority to issue a *Rule of Particular Applicability*, which establishes safety standards for the high-speed train system for speeds over 200 mph, and for the potential shared use of rail corridors.

The Authority is both the project sponsor and the lead agency for purposes of the California Environmental Quality Act (CEQA) requirements. The Authority has determined that a Program Environmental Impact Report (EIR) is the appropriate CEQA document for the project at this conceptual stage of planning and decision-making, which would include selecting a preferred corridor and station locations for future right-of-way preservation and identifying potential phasing options. No permits are being sought for this phase of environmental review. Later stages of project development would include project-specific detailed environmental documents to assess the impacts of the alternative alignments and stations in those segments of the system that are ready for implementation.

The decisions of federal agencies, particularly the FRA related to high-speed train systems, would constitute major federal actions requiring environmental review under the National Environmental Policy

[1] Chapter 796 of the Statutes of 1996; SB 1420, Kopp and Costa

Act (NEPA). NEPA requires federal agencies to prepare an Environmental Impact Statement (EIS) if the proposed action has the potential to cause significant environmental impacts. The proposed action in California warrants the preparation of a Tier 1 Program-level EIS under NEPA, due to the nature and scope of the comprehensive high-speed train system proposed by the Authority, the need to narrow the range of alternatives, and the need to protect/preserve right-of-way in the future. FRA is the federal lead agency for the preparation of the Program EIS, and the Federal Highway Administration (FHWA), the U.S. Environmental Protection Agency (EPA), the U.S. Corps of Engineers (USACE), the Federal Aviation Administration (FAA), the U. S. Fish and Wildlife Service (USFWS), and the Federal Transit Administration (FTA) are cooperating federal agencies.

The advantages of a Tier 1 Program EIR/EIS, as described in FHWA Guidelines 23 CFR 771 (52 FR 32646, August 1987), and Section 15168(b) of the CEQA Guidelines, are:

- To provide for a more exhaustive consideration of impacts and alternatives than would be practical in an individual, or project-specific EIR/EIS
- To focus on cumulative impacts that might be slighted in a case-by-case analysis;
- To avoid continual reconsideration of recurring policy issues
- To consider broad policy alternatives and programmatic mitigation strategies at an early stage when the agency has greater flexibility to deal with them
- To provide early coordination with the USACE to address avoidance and minimization opportunities for identifying the potential for selection of a Least Environmentally Damaging Practicable Alternative (LEDPA)
- To reduce paperwork by encouraging the reuse of data through subsequent tiering

The required contents of a Program EIR/EIS are the same as those of a project-level document. However, considerable differences exist in the level of detail provided because of the general nature, or conceptual design, of the proposed program and alternatives being evaluated as compared to a specific project proposal. The Program EIR/EIS is an informational document intended to analyze and to disclose to the public and to pubic decision makers the environmental effects and benefits of a proposed program and its alternatives. The preparation of the Draft Program EIR/EIS, together with its required circulation and review, ensures that evaluation of a reasonable range of alternatives is conducted, including a No-Build alternative and a modal alternative, that all significant environmental impacts are assessed, and that public input and comments are solicited to help inform the decision-making process. More specifically, the evaluation of a range of alternatives helps to ensure that avoidance and minimization of potential environmental impacts, potential benefits, costs, and trade-offs among the alternatives are addressed according to FRA[2] and other federal agency guidelines for meeting NEPA, as well as the state guidelines for meeting CEQA.

This Program EIR/EIS is to be prepared under the supervision and direction of the FRA and the Authority in conjunction with the federal cooperating agencies. It is intended that other federal, state, regional, and local agencies will use the Program EIR/EIS in reviewing the proposed program and developing feasible and practicable programmatic mitigation strategies and analysis expectations for the Tier 2 detailed environmental review process which would be expected to follow any approval of a high speed rail system.

[2] 64 Fed. Reg. 28545, March 26, 1999

1.2 PURPOSE OF AND NEED FOR IMPROVED INTERCITY TRANSPORTATION IN CALIFORNIA

As defined by NEPA, "purpose" and "need" are closely linked but subtly different. "Need" may be thought of as the problem and "purpose" as an intention to address the problem. Purpose describes why the sponsoring agency is proposing an action that may potentially cause environmental impacts. The purpose also provides the basis for selecting reasonable and practicable alternatives for consideration, comparing the alternatives, and selecting the preferred alternative.[3] Similar to the purpose required by NEPA, CEQA requires that an EIR identify the objectives of the project sponsor.[4] These objectives provide benchmarks for selecting a reasonable range of alternatives for analysis and a basis of findings for Authority actions on the program.

The purpose of the proposed action is to provide a reliable mode of travel which links the major metropolitan areas of the state, and delivers predictable, consistent travel times that will not degrade over time. A further objective is to provide an interface with commercial airports, mass transit and the highway network to relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California's unique natural resources.

This proposal is consistent with recent expressions of federal transportation policy, most notably the Transportation Equity Act for the 21st Century (TEA-21) and its predecessor the Intermodal Surface Transportation Efficiency Act (ISTEA), which encourage public transportation investment that increases national productivity and domestic and international competition while improving safety and social and environmental conditions. These policies encourage investments that:

- Link all major forms of transportation
- Improve public transportation systems and services
- Provide better access to seaports and airports
- Enhance efficient operation of transportation facilities and service

The Authority's legislative mandate is to develop a high-speed train system that is coordinated with the state's existing transportation network, particularly intercity rail and bus lines, commuter rail lines, urban rail transit lines, highways, and airports. The Authority has responded to this mandate by adopting objectives and policies for the proposed action addressing the following:

- *To provide intercity travel capacity to supplement critically over-utilized interstate highways and commercial airports*
- *To meet future intercity travel demand that will be unmet by present transportation systems and to increase capacity for intercity mobility*
- *To maximize intermodal transportation opportunities by locating stations to connect with local transit, airports, and highways*
- *To improve the intercity travel experience for Californians by providing comfortable, safe, and reliable high speed travel*
- *To provide a means to reduce travel time between major urban centers*
- *To preserve environmental quality and protect California's sensitive environmental resources and reduce emissions and vehicle kilometers/miles traveled for intercity trips*
- *To consult with the USACE during the Tier 1 environmental review and to use all available information for assessing the least damaging practicable alternative by avoiding sensitive natural resources (wetlands, habitat areas, conservation areas) where feasible*

[3] 40 CFR 1502.13, National Environmental Policy Act, 1969
[4] §15124 (b), CEQA Guidelines

- *To maximize the use of existing transportation corridors and right of way, to the extent feasible, and,*
- *To develop a practical and feasible transportation system that can be implemented by 2020 and in phases*

The need for improved intercity transportation is demonstrated by the insufficient transportation system capacity to meet existing and future demand along with deteriorating air quality, reduced reliability, and increased travel times due to the associated congestion. The interstate highway system, commercial airports and conventional passenger rail system serving the intercity travel market are currently operating at or near capacity, and will require large public investments for maintenance and expansion in order to meet existing demand and future growth over the next twenty years and beyond. The ability to expand many major highways and key airports is uncertain and may be impractical or very limited due to physical, political, and other constraints. The intercity transportation system has not been keeping pace with the tremendous increase in population and tourism in the state. Simply stated, the need for improvements serving intercity travel relates to:

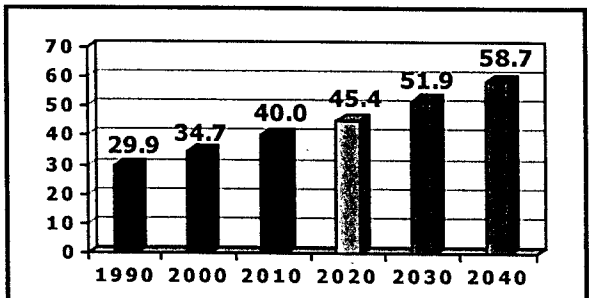
- *Future growth in travel demand for intercity trips*
- *Capacity constraints resulting in congestion and travel delays*
- *Unreliability of travel stemming from congestion, delays, weather conditions, accidents and other factors that effect the quality of life and economic well-being of residents, businesses and tourism in California*
- *Increasing accidents on intercity highways and passenger rail lines in congested corridors of travel*
- *Limited modal connections between major airports, transit systems and passenger rail in the state that reduce mobility*
- *Deteriorating and poor air quality and pressure on natural resources from transportation systems*

The following sections provide a summary of the transportation constraints and capacity limitations for intercity travel in California.

1.2.1 Travel Demand

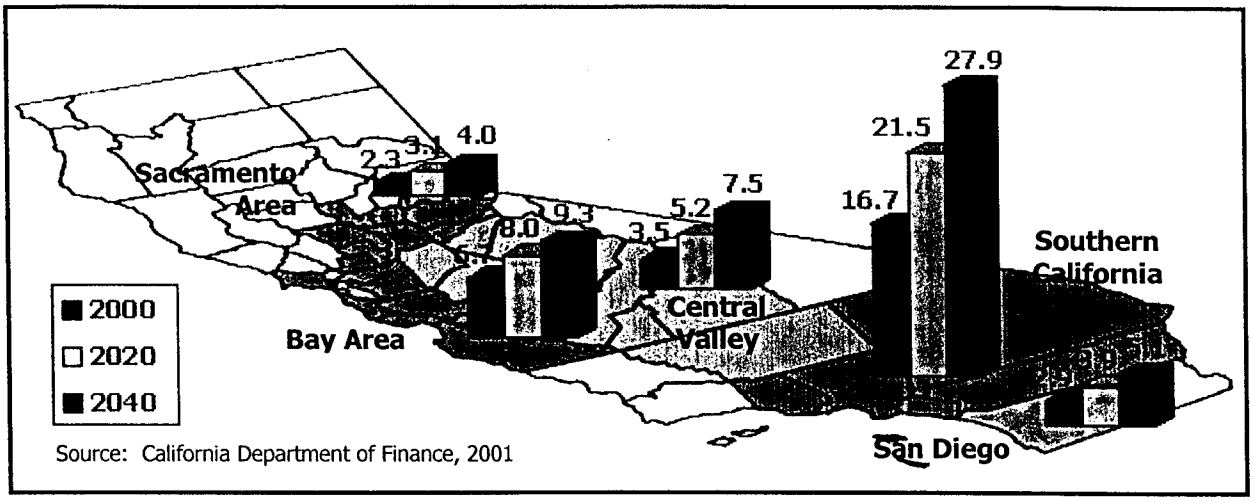
Intercity travel in California, as described in the Authority's Business Plan, is projected to grow by at least 35 percent over the next twenty years, from 155 million trips to over 209 million trips. The state population increase projected over the same period is 31 percent and 69 percent in forty years, as shown in Figure 1.2-1. Regionally, the Central Valley is projected to grow 140 percent between 2000 and 2040 followed by the Sacramento area, with 91 percent growth, as shown in Figure 1.2-2. Californians currently make over 154 million annual trips between the major metropolitan regions in northern and southern California and regions in between. In 1997, over 43 million of these trips were for journeys of at least 241 kilometers (150 miles), with a projected growth of 18 million trips by 2020. Without high-speed trains, almost 15 percent of all intercity travel and over 40 percent of the longer trips are forecast to be made by air. Auto trips are expected to account for over 84 percent of all intercity travel and over 58 percent of the longer trips.

Figure 1.2-1
California Population (millions)



Source: California Department of Finance, 2001

Figure 1.2-2
Regional Population Growth 2000-2040 (millions)



The automobile currently dominates intercity travel, but air travel is preferred for an estimated one-third of the longer intercity trips (over 241 kilometers [150 miles]). Much of the intercity travel in California consists of trips of intermediate distance. Table 1.2-2 identifies the growth in traffic volumes on major highways between city pairs from 2000 to 2020. These include over 54 million intercity trips made between the Central Valley and other major metropolitan areas, accounting for over one-third of the intercity travel. Travel between the Los Angeles and San Diego regions is the second-largest geographic market, with over 36 million trips. Travel between Sacramento and San Francisco represents the third-largest intercity travel market in the state, at over 21 million annual trips. Los Angeles to San Francisco is the busiest air travel route in the United States. In (*date*) 17.8 million trips between this city pair represented 23 percent of all intercity trips in California made by auto, air, rail or bus.

Regional and urban traffic is steadily increasing, which affects intercity commutes by delaying travelers where capacity is constrained. According to the Bay Area Regional Transportation Plan (RTP), adopted October 28, 1998 with amendments, from 1990 to 2020, regional travel within the Bay Area is expected to grow 46 percent with interregional travel expectations at 115 percent growth. Such growth impacts intercity travel, which competes for use of the same facilities, therefore increasing congestion along the entire corridor.

The demand for air travel has grown dramatically in California and nationwide. Table 1.2-1 identifies air travel growth from 1992 to the present with projections to 2010. In the last ten years, passenger demand at San Francisco International Airport (SFO) has increased from 31 million passengers in 1990 to 41 million in 2000, and at Los Angeles International Airport (LAX) the demand increased from 45.8 million in 1990 to 67 million in 2000. Federal, state and regional transportation plans have forecast continued growth in air travel over the next 20 years. By 2015, the Federal Aviation Administration (FAA) projects a 65-percent increase in passengers at SFO with an associated increase in airport congestion (source: Terminal Area Forecast, 2001). Estimates for LAX indicate that regional demand for flights will increase by about 54 percent between 1996 and 2015. The current SCAG Regional Transportation Plan indicates the practical physical capacity of LAX with its existing configuration is 78 million annual passengers. *(data to be verified and updated with FAA and Airport Authorities and reference source updated)*

Table 1.2-1
Intercity Air Travel Between Southern California and San Francisco Bay Area
(Annual Enplanements)

Airport	Historical		Projected Continued Trend		% Change
	1992	1997	2000	2010	1992-2010
Bay Area To Southern California Airports					
San Francisco	1,667,290	1,580,610	1,531,306	1,372,085	-18%
Oakland	1,317,960	1,739,000	2,072,328	3,396,394	158%
San Jose	687,680	1,349,160	2,127,815	6,221,309	805%
Bay Area	3,674,922	4,670,767	5,733,449	10,991,798	199%
Southern California To Bay Area Airports					
Los Angeles	1,688,870	2,035,590	2,286,330	3,225,084	91%
John Wayne	588,670	1,134,740	1,766,314	5,043,297	757%
Ontario	559,980	589,370	607,930	671,743	20%
Burbank	705,110	909,070	1,066,844	1,684,035	139%
Long Beach	130,300	0	0	0	-100%
So. California	3,672,930	4,668,770	5,727,418	10,624,159	189%
All Travel	**7,345,860**	**9,337,540**	**10,856,550**	**16,743,614**	**128%**

Source: Kaku Associates, 2002

Table 1.2-2
Travel Growth in 20 Years for Intercity Highways

Major Highways	Average Daily Volume 2000	Average Daily Volume 2020	% Change 2000-2020
I-5 between San Diego & Los Angeles (Orange County-LA County line)	171,000	280,000	64%
I-5 between Los Angeles & Bakersfield (I-5 junction with I-405)	243,000	380,000	56%
SR-99 in Central Valley (at Bakersfield)	109,000	180,000	65%
US 101 just south of San Jose	232,000	320,000	38%
I-580 between Bay Area & Stockton (at Pleasanton)	188,000	300,000	60%

Sources: Caltrans, SCAG, Kern COG, and MTC

Intercity rail travel is anticipating significant growth within the next 20 years. In 2001, Amtrak's 20-Year Improvement Plan[5] modeled the total travel demand growth and mode share with existing travel volumes (3.01 million riders) as a base. By 2005, ridership is forecasted to double (6.34 million riders) and to triple (12.01 million riders) by 2020.

Note: The proposed high-speed train system would accommodate a significant portion of the projected growth in travel demand by serving more than 32 and up to 58 million intercity auto and rail travelers. The ultimate capacity of the proposed new high-speed train system could be developed to exceed the forecasted 20- to 40-year demand by increasing the frequency of service, adding cars to trainsets, using double-deck passenger cars and/or linking multiple trainsets together on a dual track system. The trains

[5] *California Passenger Rail System, 20-Year Improvement Plan Technical Report* (Amtrak, 2001).

could also transport passengers from city-center to city-center, thus diminishing additional travel time from the train station to their final destination.

1.2.2 Capacity of California's Intercity Transportation System

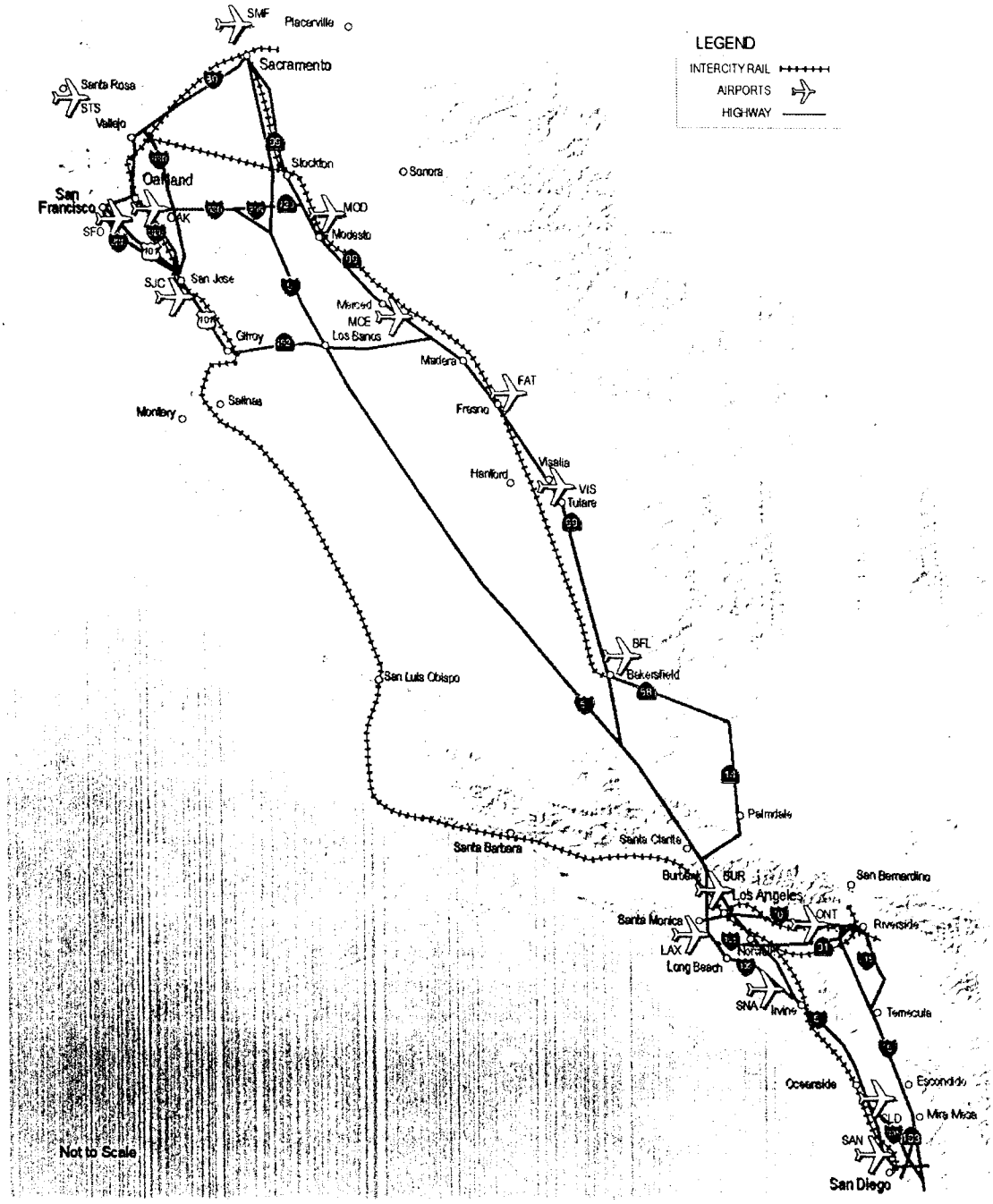
Growing population and tourism in California places severe demands on the already-congested transportation system serving the major cities in the state. As described in the Regional Transportation Plans for regions that would be served by the proposed high-speed train, the highways and airports serving key cities are currently operating at capacity and plans for expansion will not keep up with projected growth over the next 20 to 40 years. Figure 1.2-3 illustrates the major routes and airports currently being used for intercity travel between the markets served by the high-speed train study area.

The LAX Master Plan reports that ..."the passenger terminal space and the number and size of the aircraft gates are inadequate to accommodate not only the number of passengers and aircraft, but also large aircraft now being used and those that the airlines expect to introduce in the next couple of decades. On-airport circulation roads and off-airport access roads currently operate at highly congested conditions and are inadequate to handle the forecasted number of vehicles in the near future. There is no direct freeway or transit access to the airport."[6]

Airports at or nearing capacity, currently, like LAX, will likely be forced to reduce air service on intercity travel markets with high levels of service (such as between LAX and San Francisco). Without terminal and access improvements, the airfield capacity at LAX will limit the airports' passenger capacity in the future. The current facility modernization effort proposed by the Los Angeles Mayor is not designed to increase to the existing maximum physical capacity, which is estimated to be 78 million annual passengers.

[6] *LAX Master Plan Draft EIS/EIR*, 2001

Figure 1.2-3
Major Intercity Travel
Routes and Airports



The volume of traffic on major highways and the number of enplanements at key airports was presented earlier in Tables 1.2-1 and 1.2-2.

Note: A high-speed train system that would provide an intercity travel option to highways and airports would relieve some of the near-term and long-term projected demand on the existing infrastructure, potentially delaying a need to expand highways and airport facilities or make major improvements to conventional passenger rail, until more cost-effective options are available. The proposed high-speed train system would be carrying less than its ultimate potential capacity. Additional trains could be operated on the proposed high speed train system and additional passenger cars could be linked – effectively increasing the capacity of the system in the future.

1.2.3 Travel Time

Travel time is the time spent on the road, in the air, or on a train from a place of origin to a place of destination. Travel time is an important economic factor for business travel, as delays can affect worker productivity and planned business activities. Total travel time includes the time required to reach a station or an airport, time spent waiting for the next scheduled train or flight, time spent getting to the boarding area, time spent checking or retrieving luggage, time spent getting a rental car or taxi, and time spent to reach the final destination.

Table 1.2-3 shows the approximate total travel time in 2000 and the projected total travel time in 2020 for auto and air travel between city pairs, based on the ridership analysis completed for the *Final Business Plan* and information collected from Regional Transportation Planning Agencies (RTPAs).[7]

Table 1.2-3
Estimated Travel Time Between City Pairs By Auto and Air in 2000 and 2020

City Pair	Auto 2000	Auto 2020	Air 2000	Air 2020[a]	Rail 2000	Rail 2005
Los Angeles downtown to San Francisco downtown	7:15	9:20	3:20	4:50	NA	8:45
Fresno downtown to Los Angeles downtown	3:35	5:15	2:50	3:35		
Los Angeles downtown to San Diego downtown	2:35	3:15	2:35	3:35	2:44	2:10
Burbank to San Jose downtown	6:45	8:00	2:30	3:00		
Sacramento downtown to San Jose downtown	2:40	3:00	2:15	2:45	2:51	2:36

[a] Represents increased delay due to ground access and conservative estimates for terminal waiting/security time: air travel time + 15 minutes at SAN, SFO, LAX; auto travel time + 30 minutes in LA and Bay Area.

Sources: HSRA, 2000; Charles River Associates, 1998; Kaku Associates, 2001; Amtrak, 2001

Increases in travel time are a function of increased travel demand and congestion on highways used for intercity travel. Intercity passenger rail trip delays are mainly related to shared track conflicts with freight trains. Amtrak planned improvements will reduce travel time over the next twenty years by adding 21 intercity roundtrips, increasing speeds, protecting competitiveness at the ports, and enhancing grade crossing safety. These improvements would benefit all rail users, including freight and commuters. Ensuring the transport of goods and freight mobility is critical to the state's economic health. Strong cooperation with freight, commuter, and intercity rail will provide for continued growth and efficient movement of goods statewide.

[7] *Final Business Plan*, Ridership and Revenue (Amtrak, 2000)

Note: In comparison, the projected travel time for high speed rail between San Francisco and Los Angeles is estimated to be 2:30 hours, and between Los Angeles and San Diego, 1:00 hour. (California High Speed Train Final Business Plan, June 2000)

1.2.4 Reliability

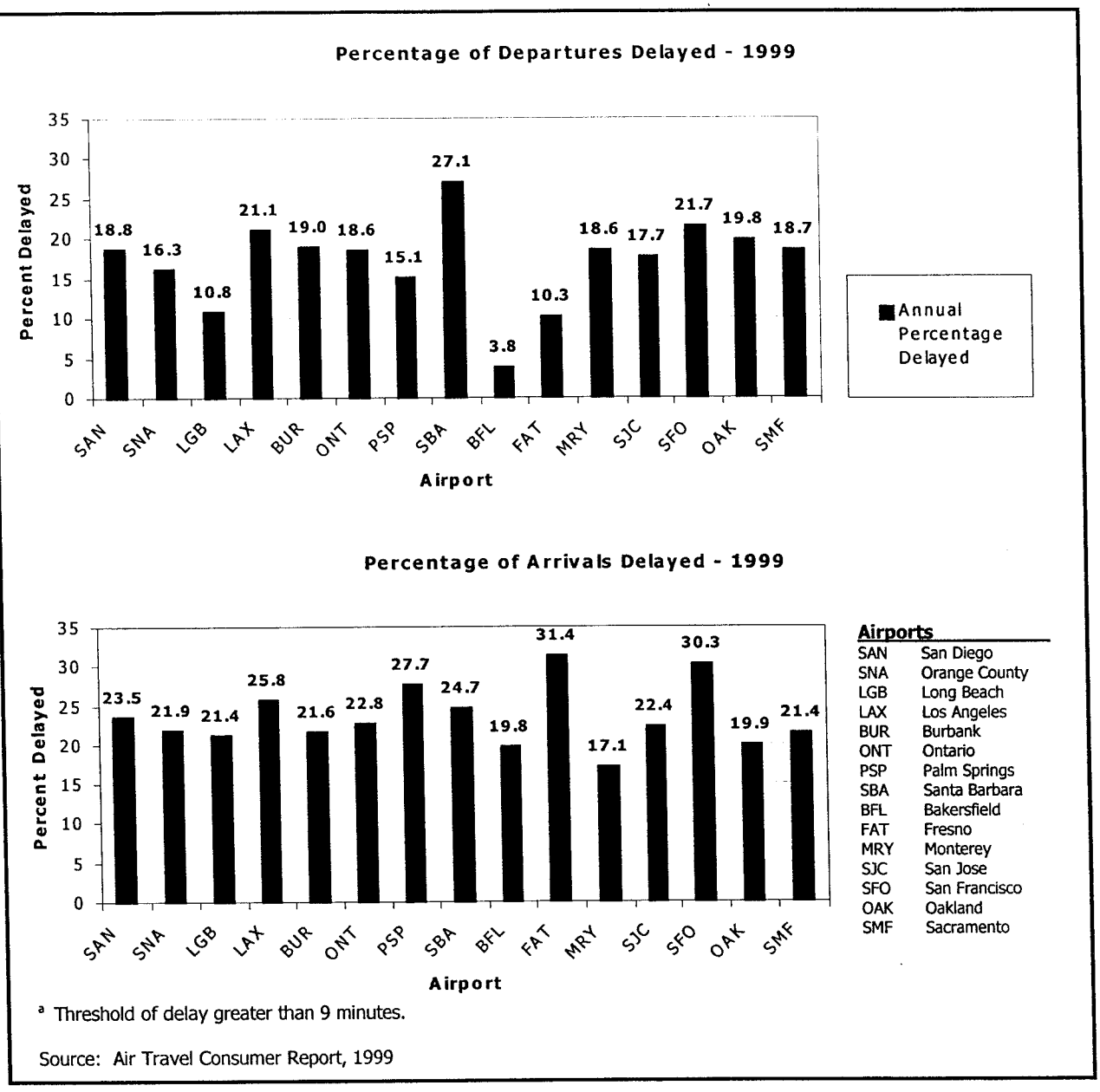
Reliability is the delivery of predictable, consistent, travel times that will not degrade over time. As discussed above, roadway congestion, limited airport capacity, track conflicts between passenger rail and freight rail, and a growing intercity travel market are adversely affecting the travel time reliability of air, conventional passenger rail, and automobile travel. Based on current performance and forecasted congestion levels, the reliability of highway and air travel will worsen in future years. Weather related events are an additional source of disruption and delay affecting transportation reliability.

From 1990 to 2020, the Bay Area RTP forecasted 249 percent growth in average daily vehicle hours of delay. Although the Bay Area is an extreme case, there are many causes of increased highway congestion rates all over California. For example, accidents, stranded roadside cars, or a routine traffic violation stop will create a bottleneck effect, delaying commuters for miles. In addition to typical congestion inducers, poor weather conditions (rain, wind, and dense Central Valley fog) also negatively affect the reliability of highway travel times. Rain and wind can make the roads dangerously slick, increasing wet-weather accident rates. Snow and icy weather make roads conditions even worse, especially in heavily traveled areas. Often times fog, haze, and glare are enough to distract drivers or cause them to slow down.

Weather conditions are also a key factor in flight delays. Aircraft delays cost both the airlines and passengers time and expense. Weather-related delays result in flight cancellations. For example, at SFO between 4,500 and 8,500 flights are cancelled each year due to weather-related problems. In 1999, 13 percent of flights between SFO and LAX were cancelled. During poor weather conditions at SFO more than 25 percent of flights are delayed by over one hour and ten percent were delayed by over two hours. When weather conditions are good, 83 percent of flights arrive on time. *(regional teams to update and reference estimated delay information-use HNTB SIMMOD analysis as data source)* The percentages of delayed arrivals and departures are illustrated in Figure 1.2-5 for each of the major California airports serving the intercity travel market, though it is noted that some airlines adjust their schedules to be able to arrive on time even if delayed at the departure. Some Airlines have increased their scheduled flight times between city pairs such as LAX-SFO in order to maintain their on-time arrival statistics in the face of potentially increasing delays (source: OIG Audit Report No. CR-2000-112, Air Carrier Flight Delays and Cancellations, July 25, 2000)

The FAA has identified the reduction of airport delay nationwide to be one of the agency's highest priorities. Aircraft delays cost both the airlines and the traveling public time and money. Data from the U.S. Department of Transportation's *Air Travel Consumer Report* shows SFO and LAX ranking among the worst of major airports in the country in terms of delay. Airport delays are a function of capacity, weather conditions, and safety conditions. When demand at an airport (number of arriving and departing flights that seek to land and take off at any one time) exceeds the capacity on the airfield at that time, flights are delayed until they can be safely accommodated. Delayed flights sometimes compound problems for other flights and can result in cancelled flights. Because the FAA Ground Delay Program holds flights at their point of departure until the destination airport can accept the demand, and because short flights (e.g. SFO to LAX) are more easily adjusted than longer flights from the east coast or Midwest, short flights are more likely to experience delays or capacity reductions.

Figure 1.2-5
Airport Delay – 1999[a]



[a] Threshold of delay greater than 9 minutes.

Source: Air Travel Consumer Report, 1999

The proposed high-speed train system would offer a new alternative mode of intercity travel in California that would increase the reliability and capacity of the overall transportation network by connecting with the existing transportation modes and connecting major metropolitan areas in California. A high-speed rail system would be less susceptible to delays caused by weather or accidents than highways, air travel, and conventional passenger rail.

Note: High-speed train systems throughout the world operate on a daily basis with extremely reliable service and on-time records. This is because high-speed trains are not affected by inclement weather, and have fully grade-separated tracks to allow for uninterrupted operational service, along with state-of-the art train control and signaling systems. Examples in Japan, France, and Germany have highly rated reliability records for up to 35 years of operation. After 16 years of operation the TGV fleet has traveled

more than 800 million kilometers (500 million miles) and transported almost 400 million passengers. Rolling stock availability is excellent, with more than 95 percent of the trainsets in service. On-time service within one minute is provided 98 percent of the time on France's high-speed system. In Japan, nearly 300 trains per day operate on the Tokaido Shinkansen line with an average delay of less than thirty seconds (JARTS, 2000).

1.2.5 Safety

Projected growth in the movement of people and goods in California by auto, air, and rail over the next two decades underscores the need for improved travel safety.

With more and more vehicles on the intercity highways, the potential for accidents increases. The California Department of Highway Safety and Motor Vehicles publishes an annual summary of accident data for state highways. In 1998, there were a total of 3,057 fatalities and 189,007 non-fatal injuries on California highways. This corresponds to an estimated injury rate of 100 per 160 million vehicle kilometers of travel (VKT) (100 million vehicle miles of travel [VMT]) per year. These statistics are increasing with 3,753 and 3,956 vehicle deaths in California in 2000 and 2001, respectively, according to the National Center for Statistics and Analysis. Nationally there were 42,116 persons killed in auto accidents in 2002, compared with 41,945 in 2001 (0.4%increase). The fatality rate for persons killed/100 Vehicle Miles Traveled was 1.52 in 2001, and 1.09 persons injured/100 VMT. California was one of three states in the United States with the highest number of persons killed in motor vehicle traffic accidents for the years 2000 and 2001 (the other two highest states were Texas and Florida).

Nationally, accident/injury rates have remained fairly constant for commercial airline travel over the last ten years. In 1999, the number of accidents for commercial airlines was 0.0077 per 1.6 million kilometers (one million miles) flown and of this there were 0.0003 fatalities.[8]

Intercity rail travel in California is provided by Amtrak, which operates the Capitol Corridor (San Jose to Auburn), San Joaquin Corridor (Oakland/Sacramento to Bakersfield), Coast Corridor (Oakland to Los Angeles) and Pacific Surfliner (San Luis Obispo to San Diego). Nationally, there were 105 fatalities and 1,161 non-fatal accidents associated with Amtrak operation in 1999. For all rail operations (freight and passenger) there were about 3.89 train accidents per 1.6 million kilometers (one million) train miles in 1999.[9] In California, there were 114 railroad fatalities (freight and passenger); 101 of these were trespassers within rail right-of-way. Conventional railroad rights-of-way are typically unfenced and at-grade. Grade crossing warning devices are not always complied with, and approach pavement markings such as turn arrows and other lane markings are often worn. Part of the problem is pedestrian and driver expectation of encountering a train. The low expectancy of a train decreases the time to detect it. Large objects appear to be moving slower than they are and at night, the visibility of trains is especially poor.

Note: In comparison, the Shinkansen, the Japanese high-speed train, has carried billions of passengers since 1964 with no fatalities. In France, Spain, and Belgium, TGV trains have run since 1981 with more than 400 million passengers, also with no fatalities. High-speed trains are very safe modes of transportation because they operate on fully separated, dedicated rights-of-way, with strict access control. This combination is not only beneficial to the safety of passengers; it also ensures the safety of the surrounding community, including autos and pedestrians by eliminating grade crossings. The proposed high-speed train system would be fully grade separated and fenced.

[8] National Transportation Safety Board, 2000

[9] Federal Railroad Administration, 2001

1.2.6 Modal Connections

Limited connections currently exist between intercity travel facilities (primarily airports) and the extensive regional urban and commuter transit systems in the state. While some major connections are planned, such as the BART extension to SFO, other airports remain entirely unconnected to the local and regional transit systems. In the very few cases where connections currently exist, the connections are cumbersome, often involving multiple transfers and long waiting times.

The proposed High-speed train system would complement and connect to airports, transit systems, and highways, providing a substantially greater degree of mobility for those who travel in California. The proposed high-speed train system could potentially connect with six of the seven highest volume airports in the state providing integrated and seamless connections for passengers and luggage. The selection of proposed station locations will focus on connecting with local and regional transit systems, such as BART, Caltrain, Muni, LA Metro Rail, Metrolink, Coaster, San Diego Trolley, and VTA to the greatest extent possible, and providing easy access to and from California's extensive highway system.

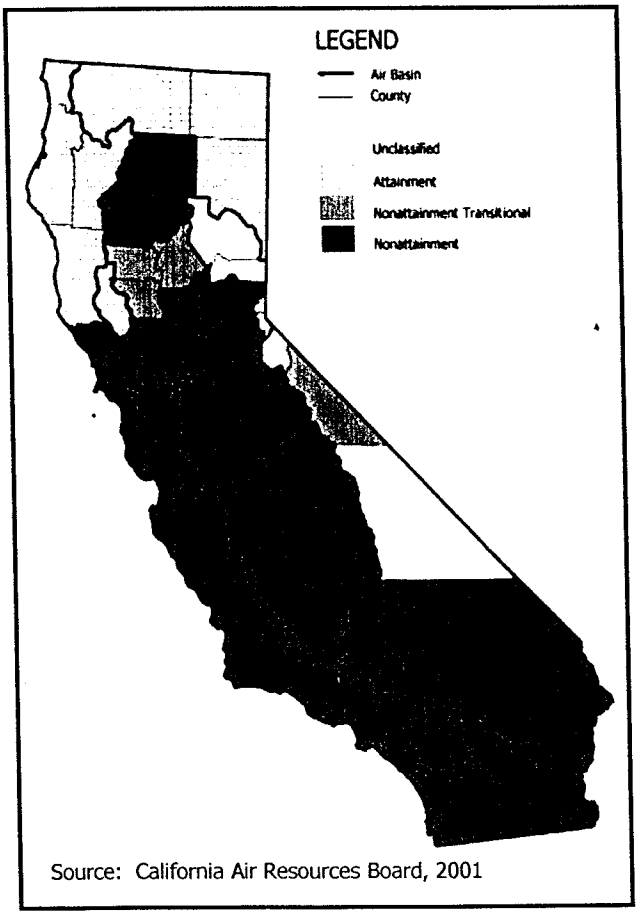
Note: In France and Germany, interconnecting high-speed train service with major airports (e.g., Charles de Gaulle in Paris, Frankfurt) is of primary importance. At these airport stations the high-speed train facilities are integrated into the overall airport facilities, providing direct transfer between the two different modes of transportation in a manner similar to changing planes on connecting flights.

1.2.7 Air Quality and Protection of Natural Resources

The federal Clean Air Act (CAA) makes "transportation conformity" the affirmative responsibility of the U.S. Department of Transportation and the Metropolitan Planning Organizations (MPOs). Transportation conformity addresses the air quality attainment and maintenance strategies contained in the California State Implementation Plan (SIP) used to evaluate transportation alternatives, including the No-Build Alternative.

Figure 1.2-6 shows the counties in California designated as non-attainment areas. Maintaining air quality is one goal of the State Transportation Improvement Program (STIP) and Regional Transportation Plans (RTPs). The challenges for metropolitan areas in the area of transportation are to continue to reduce emissions from a growing number of vehicles to acceptable levels and then maintain air quality standards by encouraging more efficient use of land resources, improving mobility, and providing alternative transportation facilities and services. Approaches aimed at reducing the demand for trips in single-occupant vehicles must be integral to all transportation plans and programs in order to help these areas conform to federal air quality standards. Developing multi-use corridors that combine designated lanes for high-occupancy vehicles, transit, and rail

Figure 1.2-6
2001 Area Designations for National Ambient Air Quality Standards – Ozone



Source: California Air Resources Board, 2001

alternatives is an adopted statewide transportation strategy in the SIP for meeting air quality objectives.

The objectives of meeting federal and state air quality standards over the next 20 to 40 years will also require reductions in the number of vehicle kilometers (miles) of travel, integrated land use and transportation planning and development, transportation demand strategies, operational improvements and use of new technologies that improve transportation efficiencies and provide a transportation alternative to the single-occupant automobile.

* 42% of a # larger than (# of intercity trips 1997 could) ~~Basically be~~ → 63% o.c

Note: For example, in 1997, 63 percent of intercity trips within California of a distance of at least 241 kilometers (150 miles) were made by automobile. With a high-speed train system in operation in 2020, it is estimated that proportion of automobile trips would be approximately 42 percent.[10] This reduction in automobile trips would translate into net reductions in vehicle emissions statewide.

In addition to the need for improved air quality in the state, the need to protect and preserve natural resources, such as: wetlands; habitat areas for sensitive species of plants and animals; migration corridors for wildlife; and agricultural lands of statewide and prime importance, from further encroachment related to expanding transportation systems is critical. These natural resources have been subject to both direct and indirect impacts as the population has increased and growth has occurred in the less developed areas of the state.

Note: A different type of land use such as 'smart growth' with nodes of planned development that is linked by transportation systems would serve to support the preservation of important natural resources while also accommodating a growing population and economic well-being.

Avoidance of sensitive natural resources is a key criterion in the environmental review process. Specific restrictions on the use of jurisdictional wetlands and encroachment into wildlife habitat areas or wildlife migration corridors and conservation districts important to the protection of threatened or endangered species are under the jurisdiction of the Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Environmental Protection Agency, the California Department of Fish and Game and other state and regional agencies and special interest groups. The consideration of alternatives that offer opportunities to protect and enhance sensitive natural resources and improve existing conditions is a priority.

Another priority is the conservation of energy, and particularly the reduction in demand for fossil fuels that deplete the state's reserves and drive up the cost of imported fuels or energy. The need to reduce the per passenger energy consumption is important now and is becoming ever more important as energy use impacts on the global climate are revealed.

per unit? Person? year?

Note: High-speed train systems have been shown to reduce the total Vehicle Miles Traveled (VMT), and related barrels of oil or BTUs consumed, and may help to reduce energy demand in the state.

[10] Charles River Associates, 1998